Crystal Set Mobile

By Al Klase – N3FRQ – December 2006

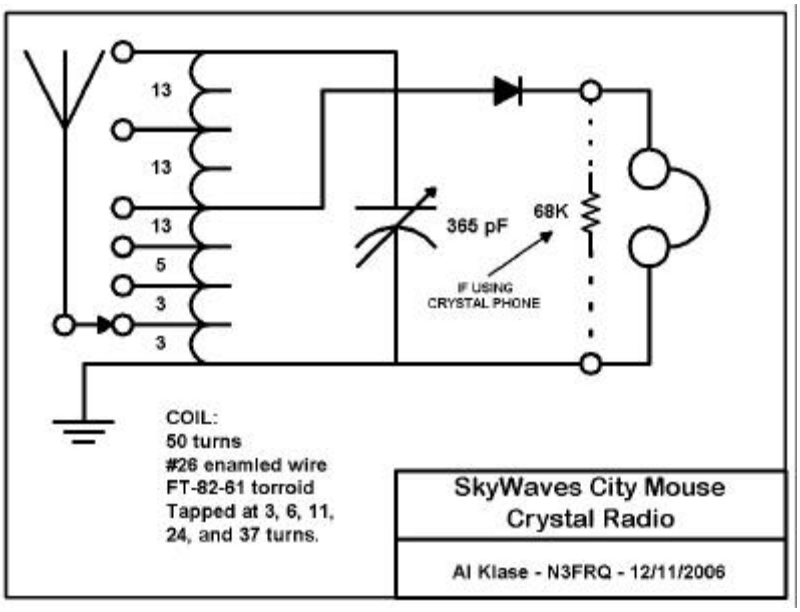
Back in the 1990's there was a Yahoo Internet "club", devoted to crystal radio development called "The Ferrite Core." One of the perennial topics of conversation was the difference between operating a crystal set near high-power stations as opposed to a more rural setting. Someone, who had read Aesop's Fables likened this to "The City Mouse and the Country Mouse." The country mouse needed a sensitive radio hooked to a large antenna, but could faintly hear distant stations without a lot of interference. The city mouse's crystal set could drive a loudspeaker using only the bed springs for an antenna, but he couldn't hear much beyond the city limits.

I've spent most of my life as a country mouse, but recently I've been frequently finding myself in Jersey City. Indeed, crystal set operation is very different there. Short antennas work pretty well, and even my nearly-deaf rocket radio picks up multiple stations. It's even possible to operate a properly designed set with the antenna terminal connected to ground with the headphone cord and listener serving as the actual antenna.

I decide to apply what I learned down town to a couple of radios I was building as Christmas presents. The circuit is very similar to the NJARC Pretty-Good Crystal Set, but the coil is wound on a ferrite toroid to save space, and there are additional antenna taps on the "high end" of the coil to better accommodate short antennas.

I recently found myself in Maywood, near Hackensack, with some time to kill while Peggy rehearsed before a Sunday-afternoon concert. I took the city mouse for a walk in a nearby park. With 20 feet of wire, 5 feet in the air, and the ground wire clipped to a metal park bench, I could comfortably choose from five or six stations. I could still hear the Jets game on WABC, with just the ground connected to the antenna terminal.

Still having some time to waste, I picked up a four-foot stick as I returned to the car. I grounded the set to the ignition key, and extended the antenna wire out the sunroof with the stick. Sure enough, the Jets were still ahead. I wound the rest of the wire around the stick as a loading coil.

The ugly stick

After an enjoyable concert (The Four Seasons and a Brandenburg Concerto w/harpsichord), I listened to the crystal set down the turnpike through the Meadow Lands, past all the towers, all the way home. I think most were on night-time power by now, as none were obnoxiously loud. I need to try that again, in broad daylight, with a speaker.